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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,723	07/11/2002	James Scott Tyler	NOR-933A	8221

37172 7590 02/23/2005

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EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/030,723	TYLER, JAMES SCOTT	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ram N Kackar	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-12,14-17 and 44-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-12,14-17,44 and 46-53 is/are rejected.
- 7) ☒ Claim(s) 45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/13/2005 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 46-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 46 recites the limitation "said plate". There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for

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patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4        Claims 1-2, 5-6, 14, 44, 49-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Shan et al (US 5605637).

Shan et al disclose a vacuum chamber with a vacuum port below electrode (Fig 1-36) and a vacuum baffle, with slits or orifices (Col 5 lines 1-3) a part of it below electrode and above vacuum port (30) which prevents plasma from leaking to the side of vacuum port (Col 4 lines 47-64), gas supply (16), work piece holding portion and powered electrode (12) and a plasma excitation source (18).

5        Claims 1-2, 5, 14 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Saburo Kanai (JP 6020293 A).

Saburo Kanai discloses a vacuum chamber and vacuum port below electrode and situated centrally (Fig 1-18) and a vacuum baffle, below electrode and above vacuum port (17) which inherently prevents plasma from leaking to the side of vacuum port, gas supply (12), work piece holding portion (16) and powered electrode (2) and a plasma excitation source (5). Saburo Kanai also discloses a work piece holding portion above powered electrode (Fig 3-7), grounded electrode (3) and a plasma excitation source (5) where the space between the electrodes is narrow and the work piece holding portion is equidistant from both electrodes.

6        Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Fujimoto (US 5413673).

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Fujimoto discloses a vacuum chamber (Fig 5A-80), gas supply port (60), work piece holding portion above powered electrode (52), grounded electrode (51) and a plasma excitation source (6) where the space between the electrodes is narrow and the work piece holding portion appears approximately equidistant from both electrodes.

7        Claims 1-2 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Yutaka Okumura (US 6267074).

Yutaka Okumura discloses a vacuum chamber with a lid and a vacuum port below electrode (Fig 13-2a) and a vacuum baffle, below electrode and above vacuum port (2b) which inherently prevents plasma from leaking to the side of vacuum port, gas supply (11), work piece holding portion and powered electrode (12) and a plasma excitation source (31).

### ***Claim Rejections - 35 USC § 103***

8        The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9        Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shan et al (US 5605637) in view of Brors et al (US 6352593).

Shan et al disclose a vacuum chamber with a vacuum port below electrode (Fig 1-36) and a vacuum baffle, with slits or orifices (Col 5 lines 1-3) a part of it below electrode and above vacuum port (30) which prevents plasma from leaking to the side of vacuum port (Col 4 lines

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47-64), gas supply (16), work piece holding portion and powered electrode (12) and a plasma excitation source (18).

Shan et al do not disclose side rails to hold work pieces of different width positioned there between.

Brors et al disclose a processing chamber where plurality of work pieces are held by rails (Fig 10).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have side rails to hold plurality of work pieces in order to increase throughput.

11 Claims 4, 7, 9-11 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shan et al (US 5605637) in view of Lei et al (US 6050446).

Shan et al disclose a vacuum chamber with a vacuum port below electrode (Fig 1-36) and a vacuum baffle, with slits or orifices (Col 5 lines 1-3) a part of it below electrode and above vacuum port (30) which prevents plasma from leaking to the side of vacuum port (Col 4 lines 47-64), gas supply (16), work piece holding portion and powered electrode (12) and a plasma excitation source (18).

Shan et al do not disclose the chamber having upper lid, a lower chamber, seal between the two and a slotted hinge to enable the lid to open and close.

Lei et al disclose a processing chamber where they disclose an upper lid (Fig 2-62), a lower chamber (202), seal between the two (92) and a slotted hinge to enable the lid to open and close with good seal (42).

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Since having lid on process chamber to allow access for processing parts is conventional, it would have been obvious for one of ordinary skill in the art at the time of invention to have them with a slotted hinge in order to have repeatable alignment and uniform sealing.

12 Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto (US 5413673) in view of Lei et al (US 6050446).

Fujimoto discloses a vacuum chamber (Fig 5A-80), gas supply port (60), work piece holding portion above powered electrode (52), grounded electrode (51) and a plasma excitation source (6) where the space between the electrodes is narrow and the work piece holding portion appears equidistant from both electrodes.

Fujimoto do not disclose the chamber having upper lid, a lower chamber, seal between the two and a slotted hinge to enable the lid to open and close.

Lei et al disclose a processing chamber where they disclose an upper lid (Fig 2-62), a lower chamber (202), seal between the two (92) and a slotted hinge to enable the lid to open and close with good seal (42).

Since having lid on process chamber to allow access for processing parts is conventional, it would have been obvious for one of ordinary skill in the art at the time of invention to have them with a slotted hinge in order to have repeatable alignment and uniform sealing.

13 Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shan et al (US 5605637) in view of Lei et al (US 6050446) as applied to claims 4, 7, 9-11 and 15-17 and further in view of Szapucki et al (US 6050216).

Shan et al in view of Lei et al is disclosed above.



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Shan et al as modified by Lei et al do not disclose that the sealing member is electrically conductive.

However use of electrically conductive seal to seal parts required to be at same electrical potential is known in the art. Szapucki et al disclose the use of electrically conductive seal for a gas showerhead (Abstract and Fig 1A-4).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have conductive seal between the lid and the lower portion since the lid and the body of the chamber in Shan et al are required to be at same ground potential.

14 Claims 46-48 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shan et al (US 5605637) in view of Wicker et al (US 6129808).

Shan et al disclose a vacuum chamber with a vacuum port below electrode (Fig 1-36) and a vacuum baffle, with slits or orifices (Col 5 lines 1-3) a part of it below electrode and above vacuum port (30) which prevents plasma from leaking to the side of vacuum port (Col 4 lines 47-64), gas supply (16), work piece holding portion and powered electrode (12) and a plasma excitation source (18).

Shan et al do not disclose the buffer plate to be formed from an electrically insulated material like ceramic.

Buffer plates in plasma processing apparatus are conventionally made of insulated material in order to contain plasma. Wicker et al disclose a plasma processing apparatus with baffle plate of ceramic (Col 11 lines 12-16).



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Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have an insulated buffer plate of ceramic in order to contain plasma towards the processing side and to have reduced contamination.

***Allowable Subject Matter***

Claim 45 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 45 is allowable because the prior art does not fairly disclose or suggest an electrical feed through extending through the vacuum distribution baffle.

***Response to Amendment***

Applicant's arguments filed 1/10/2005 have been fully considered but they are now moot in view of new grounds of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ram Kackar AU1763